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			ART UNIT 2872	PAPER NUMBER

DATE MAILED: 12/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/601,702

Applicant(s)

HORIMAI, HIDEYOSHI

Examiner

Arnel C. Lavarias

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 9/23/04, 8/19/04, 8/13/04.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,6-8,16,17,51-56,58-60,79-85 and 96-99 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6-8,16,17,51-56,58-60,79-85 and 96-99 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 9/23/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The amendments to Claims 1, 6-7, 16, 51, 54, 56, 59, and 79 in the submission dated 8/13/04 is acknowledged and accepted.
2. The addition of Claim 96 in the submission dated 8/13/04 is acknowledged and accepted.
3. The addition of Claims 97-99 in the submission dated 9/23/04 is acknowledged and accepted.

Terminal Disclaimer

4. The terminal disclaimer filed on 8/13/04 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of any patent granted on Application Number 10/343,957 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Election/Restrictions

5. The Examiner notes the previous election of Invention IV, drawn to redundant multiplex recording of plural information on the same location (Redundant multiplex recording), which was made in the Office Action dated 2/28/03, with Claims 79-85 being found readable on the elected invention. The Applicant has added Claims 96-99 in the submissions dated 8/13/04 and 9/23/04. After consideration of the newly added claims,

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the Examiner has determined that Claims 97-99 link the inventions of Groups I-V, and hence will be examined along with the elected invention. Further, Claim 96 will be examined along with the elected invention.

Response to Arguments

6. In view of the submission of the terminal disclaimer filed on 8/13/04, the Examiner respectfully withdraws the rejections of Claims 1, 6-7, 51, 53-56, 59-60 under the judicially created doctrine of obviousness-type double patenting in Section 6 of the Office Action dated 5/13/04.
7. The Applicant's arguments with respect to Claims 1-2, 6-8, 16-17, 51-56, 58-60, 79-85 have been considered but are moot in view of the new ground(s) of rejection.
8. Claims 1-2, 6-8, 16-17, 51-56, 58-60, 79-85, 96-99 are now rejected as follows.

Double Patenting

9. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

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10. Claims 1, 6-7, 51, 53-56, 59-60, 96-98 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-16 of copending Application No. 10/357708 (U.S. Patent Application Publication US2003/0147328 A1) in view of U.S. Patent No. 5917798, of record.

With respect to Claims 1, 6-7, 51, 53-56, 59-60, 97-98, copending Application No. 10/357708 discloses an optical information recording and reproducing apparatus and method (See for example Claims 1, 6-7, 12, 18) for recording information in and reproducing information from an optical recording medium (See Claim 1, line 2) having a reflecting layer and an information recording layer in which information is recorded utilizing holography (See Claim 1, lines 3-8) in the form of an interference pattern as a result of interference between information light (See Claim 1, lines 9-10) carrying the information and reference light (See Claim 1, lines 11-12) for recording, the apparatus comprising information light generation means (See Claim 1, lines 9-10); recording reference light generation means (See Claim 1, lines 11-12); a recording optical system for illuminating the information recording layer on the same side thereof with the information light and the reference light for recording (See Claim 1, lines 13-37); reproduction reference light generation means (See Claim 7, lines 23-24); a reproducing optical system for illuminating the information recording layer with the reference light for reproduction (See Claim 7, lines 25-31, 34-44); and detection means for detecting the reproduction light collected by the reproducing optical system (See Claim 7, lines 32-33), wherein the recording optical system projects the information light and the reference light for recording such that an optical axis of the information light and an optical axis of the

reference light for recording are located on a same line (See Claim 1, lines 22-25), and wherein the reproducing optical system projects the reference light for reproduction and collects the reproduction light such that an optical axis of the reference light for reproduction and an optical axis of the reproduction light are located on a same line (See Claim 7, lines 34-44). Copending Application No. 10/357708 does not specifically disclose the recording reference light being spatially modulated or the reproduction reference light being spatially modulated in the same manner as the recording reference light when information was recorded. However, the spatial modulation of the reference beam for recording, and for later readout, of a hologram is well known in the art of holography for increasing the storage capacity of the holographic recording medium by multiplexing. For example, U.S. Patent No. 5917798 specifically discloses and claims a holographic recording and reproduction system similar to that of the instant application (See for example Figures 2, 7, 10, 14; Claims 1-19), wherein the recording reference light is spatially modulated (See Claim 1), and the reproduction reference light being spatially modulated in the same manner as the recording reference light when information was recorded (See Claims 6, 12). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the recording reference light be spatially modulated and the reproduction reference light be spatially modulated in the same manner as the recording reference light when information was recorded, as taught by U.S. Patent No. 5917798, in the optical information recording and reproducing apparatus of Copending Application No. 10/357708 for the purpose of increasing the storage capacity of the holographic recording medium by multiplexing.

With respect to Claim 96, copending Application No. 10/357708 in view of U.S. Patent No. 5917798 discloses the invention as set forth above, except for the recording optical system including only one object lens for projecting the information light generated by the information light generation means and the reference light for recording generated by the recording reference light generation means upon the optical information recording medium. However, U.S. Patent No. 5917798 additionally discloses that the holographic recording and reproduction system may include only a single objective lens (See for example 41 in Figures 3, 8-10) for projecting the information light generated by the information light generation means and the reference light for recording generated by the recording reference light generation means upon the optical information recording medium. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the recording optical system of copending Application No. 10/357708 include only one object lens for projecting the information light generated by the information light generation means and the reference light for recording generated by the recording reference light generation means upon the optical information recording medium, as taught by U.S. Patent No. 5917798, for the purpose of reducing the complexity and cost of the optical system, since fewer optical elements are required.

This is a provisional obviousness-type double patenting rejection.

11. Claims 1, 6-7, 51, 53-56, 59-60, 96-98 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims

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1-30 of copending Application No. 10/332057 (U.S. Patent Application Publication US2004/0100892 A1) in view of U.S. Patent No. 5917798, of record.

With respect to Claims 1, 6-7, 51, 53-56, 59-60, 97-98, copending Application No. 10/332057 discloses an optical information recording and reproducing apparatus and method (See for example Claims 1, 8, 14, 18, 21, 27) for recording information in and reproducing information from an optical recording medium (See Claim 1, line 2) and an information recording layer in which information is recorded utilizing holography (See Claim 1, lines 3-5) in the form of an interference pattern as a result of interference between information light (See Claim 1, lines 6-8) carrying the information and reference light (See Claim 1, lines 9-10) for recording having spatial modulation (See Claim 5), the apparatus comprising information light generation means (See Claim 1, lines 6-8); recording reference light generation means (See Claim 1, lines 9-10); a recording optical system for illuminating the information recording layer on the same side thereof with the information light and the reference light for recording (See Claims 1-2); reproduction reference light generation means (See Claim 14, lines 9-10); a reproducing optical system for illuminating the information recording layer with the reference light for reproduction (See Claim 14, lines 11-19); and detection means for detecting the reproduction light collected by the reproducing optical system (See Claim 14, lines 20-21), wherein the recording optical system projects the information light and the reference light for recording such that an optical axis of the information light and an optical axis of the reference light for recording are located on a same line (See Claims 1-2), and wherein the reproducing optical system projects the reference light for reproduction and collects the

reproduction light such that an optical axis of the reference light for reproduction and an optical axis of the reproduction light are located on a same line (See Claims 14-15). Copending Application No. 10/332057 does not specifically disclose the information recording medium having a reflecting film. However, the use of reflecting layers in holographic recording systems are known in the art of holography. For example, U.S. Patent No. 5917798 specifically discloses and claims a holographic recording and reproduction system similar to that of the instant application (See for example Figures 2, 7, 10, 14; Claims 1-19), wherein the information recording medium includes a reflective layer (See for example 5 in Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the information recording medium include a reflective layer, as taught by U.S. Patent No. 5917798, in the optical information recording and reproducing apparatus of Copending Application No. 10/332057 for the purpose of providing additional beam position control since such reflective layers may include pits and grooves for servo and tracking applications, while allowing for routing of the object and reference beam to the recording information layer during recording and routing of the reproduced light from the recording information layer during playback.

With respect to Claim 96, copending Application No. 10/332057 in view of U.S. Patent No. 5917798 discloses the invention as set forth above, except for the recording optical system including only one object lens for projecting the information light generated by the information light generation means and the reference light for recording generated by the recording reference light generation means upon the optical information

recording medium. However, U.S. Patent No. 5917798 additionally discloses that the holographic recording and reproduction system may include only a single objective lens (See for example 41 in Figures 3, 8-10) for projecting the information light generated by the information light generation means and the reference light for recording generated by the recording reference light generation means upon the optical information recording medium. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the recording optical system of copending Application No. 10/332057 include only one object lens for projecting the information light generated by the information light generation means and the reference light for recording generated by the recording reference light generation means upon the optical information recording medium, as taught by U.S. Patent No. 5917798, for the purpose of reducing the complexity and cost of the optical system, since fewer optical elements are required.

This is a provisional obviousness-type double patenting rejection.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 6-7, 51, 53-56, 59-60, 96-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curtis et al. (U.S. Patent No. 5719691), of record, in view of Rembault (U.S. Patent No. 4025731) and Gabor (U.S. Patent No. 3899240), of record.

Curtis et al. discloses an optical information recording and reproducing apparatus and method (See Figure 1) for recording information in and reproducing information from an optical recording medium (See 13 in Figure 1) having an information recording layer in which information is recorded utilizing holography (See Figure 1) in the form of an interference pattern as a result of interference between information light (See 26 in Figure 1) carrying the information and reference light (See 11 in Figure 1) for recording having a spatial modulation (See col. 4, lines 20-37; note the spatially modulated phase formed by the phase mask), the apparatus comprising information light generation means (See 26, 15 in Figure 1); recording reference light generation means including modulation means (See 11, 25 in Figure 1; col. 4, lines 20-37); a recording optical system for illuminating the information recording layer on the same side thereof with the information light and the reference light for recording (See 16, 17, 18, 24, 12 in Figure 1); reproduction reference light generation means including modulation means for spatially modulating the light in the same manner in which the reference light was modulated when the information was recorded (See 11, 25 in Figure 1; col. 4, lines 20-37; Abstract; col. 1, line 60-67; col. 10, lines 61-67); a reproducing optical system (See 16, 17, 18, 24, 12 in Figure 1) for illuminating the information recording layer with the reference light for reproduction on a same side of the information recording layer that is illuminated with the information light and the reference light for recording and for

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collecting reproduction light (It is noted that 16, 17, 18, 24, 12 in Figure 1 of Curtis et al. are located on one side of holographic medium 13); and detection means for detecting the reproduction light collected by the reproducing optical system (See 22 in Figure 1).

Curtis et al. lacks the information recording medium having a reflecting film; collecting the reproduction light on the same side of the information recording layer that is illuminated with the reference light for reproduction; the optical axis of the reference light for recording and an optical axis of the information light being on the same line; the optical axis of the reference light for reproduction and an optical axis of the reproduction light being on the same line; and the recording optical system including only one object lens for projecting the information light and reference light for recording onto the recording medium. However, it is well known in the art of holography to utilize or provide reflecting films on the holographic information recording media used to record holographic information. For example, Rembault teaches a holographic information recording medium (See for example Figures 2-3, 10-12) for recording and playback in a holographic optical pickup device (See Figures 3, 5), wherein the recording medium (See 3 in Figure 3; Figures 10-12) further includes a reflecting film (See 32 in Figures 10-12) disposed adjacent to the holographic recording film (See 320, 321 in Figures 10-12). In addition, by using a reflective layer in the information recording medium, Rembault teaches that one may collect the reproduction light on the same side of the information recording layer that is illuminated with the reference light for reproduction (See Figure 5; col. 9, line 51-col. 11, line 34). The combined teachings of Curtis et al. and Rembault lack the optical axis of the reference light for recording and an optical axis of the

information light being on the same line and the optical axis of the reference light for reproduction and an optical axis of the reproduction light being on the same line or the recording optical system including only one object lens for projecting the information light and reference light for recording onto the recording medium. However, such particular optical configurations for recording and reproduction of holograms from a holographic information recording medium are known in the art. For example, Gabor teaches a method and apparatus for generating discriminating holograms (See for example Figure 1), wherein the optical axes of the object and recording reference beams, as well as the optical axes of the reproduction reference beam and the reproduction beam, may be located on the same line (See beams traversing element 30 and 33 in Figure 1). In utilizing such an optical configuration for recording, only one object lens for projecting the information light and reference light for recording onto the recording medium is required (See 30 in Figure 1). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the information recording medium have a reflecting film; collect the reproduction light on the same side of the information recording layer that is illuminated with the reference light for reproduction; the optical axis of the reference light for recording and an optical axis of the information light be on the same line; the optical axis of the reference light for reproduction and an optical axis of the reproduction light be on the same line; and the recording optical system include only one object lens for projecting the information light and reference light for recording onto the recording medium, as taught by both Rembault and Gabor, in the optical information recording and reproducing apparatus and method of

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Curtis et al., for the purpose of 1) utilizing both sides of the information recording medium to for storage, thus increasing storage capacity; 2) confining the optical system for recording and reproducing the hologram from the information recording medium to a smaller space or footprint; and 3) reducing the complexity of the optical recording system since fewer optical elements (e.g. lenses and mirrors) are required.

14. Claims 16, 79-80, 82, 99 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curtis et al. in view of Rembault and Gabor as applied to Claims 1, 6-7, 51, 53-56, 59-60, 96-98 above, and further in view of Burchardt (U.S. Patent No. 3573362), of record, and Liu et al. (U.S. Patent No. 6272095), of record.

Curtis et al. in view of Rembault and Gabor discloses the invention as set forth above. Curtis et al. in view of Rembault and Gabor additionally discloses the optical information recording and reproducing apparatus performing spatial multiplexing (See col. 1, lines 15-20; col. 5, lines 23-34; col. 8, lines 1-17 of Curtis et al.). Curtis et al. in view of Rembault and Gabor lacks the information light generation means generating plural information lights and a wavelength selection means for selecting a wavelength of light illuminating the information recording layer from among a plurality of wavelengths. However, Burchardt discloses an optical information reproduction apparatus for recording and reproducing information utilizing holography (See Figures 3A, 4, 5, 9; col. 9, lines 17-28) from an optical information recording medium having an information recording layer (See 423 in Figure 4), and information light generation means generating plural information lights (it is noted that the plural information lights of Burchardt occur temporally as a function of time, i.e. each pulse generated by 31 occurs sequentially in

time). Further, Liu et al. teaches an apparatus and method for storing and/or reading data on an optical disk by holographic means (See Figures 1-2, 4-6, 8-10, 13, 18; col. 3, line 7-col. 6, line 27; col. 18, line 42-col. 19, line 51). In particular, Liu et al. teaches the reproduction reference light generation means (See 104, 106 in Figure 4 for example); a reproducing optical system for illuminating the information recording layer with the reference light and for collecting reproduction light generated at the information recording layer (See 110, 120 in Figure 4 for example); and detection means for detecting the reproduction light collected by the reproducing optical system (See 132, 130, 124 in Figure 4 for example). Liu et al. additionally teaches wavelength selection means for selecting a wavelength of light illuminating the information recording layer from among a plurality of wavelengths (See col. 18, line 20-col. 20, line 52) and the apparatus performing wavelength and spatial multiplexing (See for example Figure 3; col. 20, lines 13-30). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the apparatus and method for storing and/or reading data on an optical disk by holographic means of Curtis et al. in view of Rembault and Gabor to further include information light generation means generating plural information and also to include wavelength selection means for selecting a wavelength of light illuminating the information recording layer from among a plurality of wavelengths, as taught by Burchardt and Liu et al. One would have been motivated to do this to take advantage of existing, mature, and low-cost drive mechanisms and electronics found in conventional CD-ROM drives, which are easily modified to operate the above optical reproduction system. One would have been motivated to include wavelength selection

means and spatial/wavelength multiplexing to increase the storage density of the recording medium, as well as reducing cross-talk noise.

15. Claims 2, 8, 17, 52, 58 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curtis et al. in view of Rembault and Gabor, and further in view of Burchardt and Liu et al. as applied to Claims 1, 6-7, 51, 53-56, 59-60, 96-98 above, and further in view of van Rosmalen (U.S. Patent No. 4638471), of record, Reid et al. (U.S. Patent No. 4213193), of record, or Hays et al. (U.S. Patent No. 5777760), of record.

Curtis et al. in view of Rembault and Gabor, and further in view of Burchardt and Liu et al. discloses the invention as set forth above in Claims 1, 6-7, 51, 53-56, 59-60, 96-98 above, except for the optical information recording medium having a positioning region, and the apparatus further comprising position control means. However, van Rosmalen, Reid et al., and Hays et al. all disclose various optical recording and reproducing apparatus that utilize a recording medium having a positioning region, and the apparatus further comprising a position control means. van Rosmalen teaches a conventional recording and reproducing apparatus (See Figure 1) wherein the record carrier includes locations having signal information, as well as positional information of the scanning spot relative to the information track (See col. 5, lines 1-20). Reid et al. similarly discloses a conventional recording and reproducing apparatus, particularly suited for holography (See Figure 1) wherein particular locations on the storage medium include block bits for providing information on identification and location of any particular data page in one of the plural hologram data tracks (See Figure 8; col. 6, lines 14-49). This data is used in conjunction with a controller means (See 46 in Figure 1; col. 5, line 38-

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col. 6, line 13). Hays et al. teaches a position feedback system for a volume holographic storage medium (See Figure 10) wherein a plurality of servo blocks are recorded on the storage medium to provide position information to position control means, such as a voice coil motor (See Figure 2; abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical information recording medium of Curtis et al. in view of Rembault and Gabor, and further in view of Burchardt and Liu et al. to further have a positioning region, and the apparatus further comprising position control means, as taught by van Rosmalen, Reid et al., and Hays et al., for the purpose of improving storage capacity and reducing cross-talk noise.

16. Claims 81, 83-85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Curtis et al. in view of Rembault and Gabor, and further in view of Burchardt and Liu et al. as applied to Claim 79 above, and further in view of Reid et al.

Curtis et al. in view of Rembault and Gabor, and further in view of Burchardt and Liu et al. discloses the invention as set forth above, except for a parity generation unit and the optical recording unit recording a same interference pattern on plural locations on the optical information recording medium. However, Reid et al. teaches a conventional recording and reproducing apparatus, particularly suited for holography (See Figure 1). Reid et al. additionally discloses particular locations on the storage medium including block and parity bits for providing information on identification, location, and data parity of any particular data page in one of the plural hologram data tracks (See Figure 8; col. 6, lines 14-49). Such parity and block bits are generated prior to or during holographic data

recording (See col. 6, lines 21-30) by a generation unit (although not specifically disclosed, such a unit is required to produce such parity and block bit data). It is noted in particular that such a holographic recording and reproducing apparatus provides data redundancy (See col. 1, lines 13-40) wherein such data, whether parity data, block data, or actual holographic data, is recorded multiple times, either in the same location or in multiple locations on the storage medium. Therefore, it would have been obvious to one having ordinary skill in the art to have the optical recording unit of record the same interference pattern on plural locations on the optical information recording medium, as taught by Reid et al., in the optical information recording apparatus of Curtis et al. in view of Rembault and Gabor, and further in view of Burchardt and Liu et al. for the purpose of providing data redundancy and decreasing data retrieval access times.

Conclusion

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

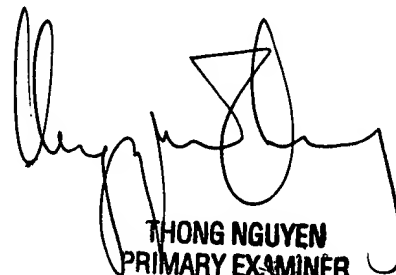
18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnel C. Lavarias
12/9/04



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